What is claimed is:

1. A piezoelectric resonator comprising:

a piezoelectric substrate;

a first vibrating electrode;

a second vibrating electrode;

a first pad; and

a second pad,

wherein:

said piezoelectric substrate is a hexahedron;

said first vibrating electrode is disposed on a first side of said piezoelectric substrate perpendicular to a thickness direction;

said second vibrating electrode is disposed on a second side of said piezoelectric substrate perpendicular to the thickness direction, and faces to said first vibrating electrode;

said first pad and said second pad are respectively disposed in an area having a small vibration displacement on at least one side of said piezoelectric substrate perpendicular to the thickness direction;

said first pad is made of an electrical conductor and electrically connected to said first vibrating electrode; and

said second pad is made of an electrical conductor and electrically connected to said second vibrating electrode.

2. The piezoelectric resonator according to claim 1, wherein said first pad and said second pad are disposed on the same side.

3. The piezoelectric resonator according to claim 1, wherein said first pad and said second pad are disposed on different sides.

4. The piezoelectric resonator according to claim 1,

wherein said first pad and said second pad respectively include an electrically conductive film and a bump, and

wherein said conductive film is adhered to a surface of said piezoelectric substrate, and said bump is adhered to said conductive film.

5. The piezoelectric resonator according to claim 1, further comprising:

a third pad; and

a fourth pad,

wherein said third pad and said fourth pad are respectively disposed in an area having a small vibration displacement on at least one side of said piezoelectric substrate perpendicular to the thickness direction.

6. The piezoelectric resonator according to claim 5, wherein said third pad and said fourth pad are made of an electrical conductor.

7. The piezoelectric resonator according to claim 6, wherein said third pad and said fourth pad respectively include an electrically conductive film and a bump,

wherein said conductive film is adhered to a surface of said piezoelectric substrate, and said bump is adhered to said conductive film.

8. The piezoelectric resonator according to claim 5, wherein said third pad and said fourth pad are made of an electrical insulator.

9. The piezoelectric resonator according to claim 4, wherein said bump is made of at least one selected from the group consisting of Au, Pt, Pd, Ag, Cu, Ni, Al, an alloy thereof, and solder.

10. The piezoelectric resonator according to claim 1, wherein the area having a small vibration displacement is selected from at least a portion of four corner areas of the first side.

11. The piezoelectric resonator according to claim 1,

which operates in a basic wave thickness extensional vibration mode.

12. The piezoelectric resonator according to claim 1, wherein said piezoelectric substrate is made of a lead-free piezoelectric material.

13. A piezoelectric resonator component comprising:

a piezoelectric resonator; and

a substrate,

wherein said piezoelectric resonator is the piezoelectric resonator including:

a piezoelectric substrate;

a first vibrating electrode;

a second vibrating electrode;

a first pad; and

a second pad,

wherein:

said piezoelectric substrate is a hexahedron;

said first vibrating electrode is disposed on a first side of said piezoelectric substrate perpendicular to a thickness direction;

said second vibrating electrode is disposed on a second side of said piezoelectric substrate perpendicular to the thickness direction, and faces

to said first vibrating electrode;

said first pad and said second pad are respectively disposed in an area having a small vibration displacement on at least one side of said piezoelectric substrate perpendicular to the thickness direction;

said first pad is made of an electrical conductor and electrically connected to said first vibrating electrode; and

said second pad is made of an electrical conductor and electrically connected to said second vibrating electrode, and

wherein said substrate has at least two terminal electrodes on a surface thereof, and

wherein said piezoelectric resonator is mounted on the surface of said substrate, and

said first pad and said second pad are connected to said two terminal electrodes.

(14) A method of producing a piezoelectric resonator component, wherein

said piezoelectric resonator component includes a piezoelectric resonator and a substrate, and

said piezoelectric resonator includes a piezoelectric substrate, a first vibrating electrode, a second vibrating electrode, a first pad, and a second pad,

and

said piezoelectric substrate is a hexahedron, and

said first vibrating electrode is disposed on a first side of said piezoelectric substrate perpendicular to a thickness direction, and

said second vibrating electrode is disposed on a second side of said piezoelectric substrate perpendicular to the thickness direction, and is opposing to said first vibrating electrode, and

said first pad and said second pad are respectively disposed in an area having a small vibration displacement on at least one side of said piezoelectric substrate perpendicular to the thickness direction, and

said first pad is made of an electrically conductive film and electrically connected to said first vibrating electrode, and

said second pad is made of an electrically conductive film and electrically connected to said second vibrating electrode, and

said substrate has at least two terminal electrodes on a surface thereof,

said method comprising:

forming a bump on said electrically conductive film constituting each of said first pad and said second pad; and

mounting said piezoelectric resonator on the

surface of said substrate and connecting said first pad and said second pad to said two terminal electrodes via said bump.

15. The method of producing a piezoelectric resonator component according to claim 14, further comprising:

forming a third pad and a fourth pad in an area having a small vibration displacement on a side of said piezoelectric substrate perpendicular to the thickness direction and

facing the side on which said third pad and said fourth pad are formed to the surface of said substrate.

16. The method of producing a piezoelectric resonator component according to claim 15, wherein said third pad and said fourth pad are made of an electrical conductor.

17. The method of producing a piezoelectric resonator component according to claim 16, wherein said third pad and said fourth pad are respectively formed by adhering an electrically conductive film to said piezoelectric substrate and applying a bump on said electrically conductive film.

18. The method of producing a piezoelectric resonator component according to claim 14, wherein the area having a

small vibration displacement is selected from at least a portion of four corner areas of the first side.

19. A piezoelectric resonator component comprising:

a piezoelectric transducer;

a substrate; and

connecting conductors,

wherein:

said piezoelectric transducer includes a ceramic piezoelectric element, vibrating electrodes, and lead electrodes;

said substrate has terminal electrodes on a surface thereof; and

each of said connecting conductors includes a ~~nucleus~~ and an electrically conductive film adhered to a surface of the nucleus and is disposed between said lead electrode of said piezoelectric transducer and said terminal electrode of said substrate to electrically and mechanically connect and fix these electrodes, and said nucleus includes ceramics whose linear expansion coefficient is close to that of one of said piezoelectric element and said substrate.

20. The piezoelectric resonator component according to claim 19, wherein said nucleus of said connecting conductor has a ball shape.

21. The piezoelectric resonator component according to claim 19, wherein said electrically conductive film of said connecting conductor includes an electrically conductive resin film.

22. The piezoelectric resonator component according to claim 19, wherein said electrically conductive film of said connecting conductor includes a metal film.

23. The piezoelectric resonator component according to claim 22, wherein said metal film includes at least one of Ag, Cu, Ni, Au and Pd.

24. The piezoelectric resonator component according to claim 19, wherein said piezoelectric transducer operates in a thickness extensional vibration mode.

25. The piezoelectric resonator component according to claim 24,

wherein said vibrating electrodes are a pair of vibrating electrodes disposed on each side of said piezoelectric element perpendicular to the thickness direction, and

wherein said connecting conductors are respectively connected to each of said lead electrodes of said

piezoelectric transducer at a point where said piezoelectric transducer has the least vibration displacement.

26. The piezoelectric resonator component according to claim 19, wherein said piezoelectric transducer utilizes fundamental wave vibrations.

27. The piezoelectric resonator component according to claim 26, wherein the piezoelectric element has an effective Poisson's ratio of less than 1/3.

28. The piezoelectric resonator component according to claim 19, wherein said piezoelectric transducer includes a piezoelectric substrate made of a lead-free piezoelectric material.